

"Ohsawa"). The Office Action has further rejected claims 7-9 under 35 U.S.C. § 103(a) as being unpatentable over *Gilbert* in view of *Kobayashi, et al.* (U.S. Patent No. 4,566,813) (hereinafter "*Kobayashi*"). The Office Action has further rejected claims 12 and 13 under 35 U.S.C. § 103(a) as being unpatentable over *Gilbert* and *Ohsawa* in view of the *IBM Technical Disclosure Bulletin* (NN79034110).

The reference *Gilbert*, which qualifies as prior art under 35 U.S.C. § 102(e), does not preclude patentability under 35 U.S.C. § 103 since *Gilbert* and the claimed invention in claims 1-3 and 7-13 were at the time the invention was made, subject to an obligation of assignment to the same person, which in this case was IBM. 35 U.S.C. § 103(c). Thus, *Gilbert* is disqualified as being used as a prior art reference. 35 U.S.C. § 103(c). Consequently, the rejections of claims 1-3 and 7-13 are moot.

II. REJECTIONS OF CLAIMS 4 AND 6 UNDER 35 U.S.C. § 103(a):

The Office Action has rejected claims 4-6 as being unpatentable over *Quaif, et al.* (U.S. Patent No. 4,020,939) (hereinafter "*Quaif*") in view of *Ohsawa*. Applicants respectfully traverse these rejections for at least the reasons stated below and respectfully request that the Examiner reconsider and withdraw all outstanding rejections.

A. The Examiner Has Not Presented a *Prima Facie* Case of Obviousness for Rejecting Claims 4 and 6.

A *prima facie* showing of obviousness requires the Examiner to establish, *inter alia*, that the prior art references teach or suggest, either alone or in combination, all of the limitations of the claimed invention, and the Examiner must provide a motivation or suggestion to combine or modify the prior art references to make the claimed inventions. M.P.E.P. § 2142. The motivation or suggestion to combine references must come from one of three possible sources: the nature of the problem to be solved, the teaching of the prior art and the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 47 U.S.P.Q.2d. 1453, 1458 (Fed. Cir. 1998).

The showings must be clear and particular. *In re Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433-34 (Fed. Cir. 2002); *In re Kotzab*, 217 F.3d 1365, 1370, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000); *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). Broad conclusory statements regarding the teaching of multiple references, standing alone, are not evidence. *Id.*

In order to reject under 35 U.S.C. § 103, therefore, the Examiner must provide a proper motivation for combining or modifying the references. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1457-1458 (Fed. Cir. 1998); M.P.E.P. § 2142. The Examiner's motivation for modifying *Quaif* with *Ohsawa* to have a controller for changing the impact force of the pins in accordance with the types of characters that are to be printed is so that "a design density for a selector character can be achieved." Paper No. 2, Page 5.

There is no motivation to combine *Quaif* with *Ohsawa* as there is no suggestion or motivation in either *Quaif* or *Ohsawa* or in their combination or in the knowledge of those ordinarily skilled in the art to combine the teaching of *varying the print hammer repetition rate in accordance with the printing speed to maintain constant width of the printed characters* as taught in *Quaif* with the teaching of *increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function* as taught in *Ohsawa*. *Quaif* teaches:

[a] matrix printer hammer repetition rate control is disclosed for varying the print hammer repetition rate in accordance with printing speed, thereby maintaining constant width of printed characters without dot column sensing.

Quaif, abstract. Thus, *Quaif* teaches varying the print hammer repetition rate in accordance with the printing speed to maintain a constant width of the printed characters. *Ohsawa* teaches that:

in keeping with the principle of the present invention, the object is accomplished by a unique method for controlling the printing impact

in the impact type dot printer which increases the printing impact power in large amount in case of normal density imprint function and decreases the printing impact power in small amount in case of high density imprint function.

Ohsawa, column 3, lines 10-16. Thus, *Ohsawa* teaches increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function. The Examiner has not shown why a reference that teaches *varying the print hammer repetition rate to maintain a constant width of the printed characters* as taught in *Quaif* should be combined with a reference that teaches *increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function* as taught in *Ohsawa* from either the nature of the problem to be solved, the teachings of the prior art or in the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). The Examiner must submit **objective evidence** and not rely on his subject opinion in support of combining the reference that teaches varying the print hammer repetition rate to maintain constant width of the printed characters with a reference that teaches increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function. *In re Lee*, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2002). Therefore, the Examiner has not present a *prima facie* case of obviousness for rejecting claims 4 and 6.

Furthermore, as stated above, the Examiner's motivation for modifying *Quaif* with *Ohsawa* to have a *controller for changing the impact force of the pins in accordance with the types of characters that are to be printed* is so that a design density for a selector character can be achieved. The Examiner has not objectively shown why *Quaif* should be modified to have a *controller for changing the impact force of the pins in accordance with the types of characters that are to be printed* from either the nature of the problem to be solved, the teaching of the prior art or the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 47 U.S.P.Q.2d 1453,

1458 (Fed. Cir. 1998). Furthermore, the Examiner has not objectively shown why *Quaif* should be modified so that a design density for a selected character can be achieved from either *the nature of the problem to be solved, the teaching of the prior art or the knowledge of persons of ordinary skill in the art*. *Id.* The Examiner must submit **objective evidence** and not rely on his subjective opinion in support of modifying *Quaif* to use *a controller for changing the impact force of the pins in accordance with the types of characters that are to be printed*. *In re Lee*, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2002). Further, the Examiner must submit **objective evidence** and not rely on his subjective opinions in support of modifying *Quaif* so that a design density for a selected character can be achieved. *Id.* Therefore, the Examiner has not presented a *prima facie* case of obviousness for rejecting claims 4 and 6.

Further, there is no motivation to modify *Quaif* with *Ohsawa* as the *proposed modification would render the invention in Quaif unsatisfactory for its intended purpose and therefore there is no suggestion or motivation to make the proposed modification*. *In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984); M.P.E.P. § 2143.01. Furthermore, the *proposed modification would change the principle of operation of Quaif* and therefore the teachings of *Quaif* are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 U.S.P.Q. 349 (C.C.P.A. 1959); M.P.E.P. § 2143.01. *Quaif* teaches that:

[t]he print head impact energy is maintained substantially constant during printing by the novel hammer impact control circuitry of the present invention. The print head energy, in the form of electrical impulses, is applied to the individual matrix wire solenoid drivers in the print head, and is maintained constant notwithstanding variations in the output voltage or current of power supply.

(*Quaif*, column 3, lines 39-46.) Thus, *Quaif* teaches that the *print head impact energy is maintained substantially constant during printing*. As stated above, *Ohsawa* teaches *increasing the printing impact energy in the case of a normal density imprint function and decreasing the printing impact energy in the case of a high density*

imprint function. Thus, by combining *Ohsawa* with *Quaif*, *Quaif* would no longer be able to maintain the print head impact energy to be substantially constant during printing. Hence, the *proposed modification* would render the invention in *Quaif* *unsatisfactory for its intended purpose*, and therefore, there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984); M.P.E.P. § 2143.01. Furthermore, the *proposed modification* would change the principal of operation of *Quaif*, and therefore, the teachings of *Quaif* are not sufficient to render the claims *prima facie* obvious as a matter of law. *In re Ratti*, 270 F.2d 810, 123 U.S.P.Q. § 349 (C.C.P.A. 1959); M.P.E.P. § 2143.01. Therefore, the Examiner has not presented a *prima facie* case of obviousness for rejecting claims 4 and 6.

B. *Quaif* and *Ohsawa*, taken singularly or in combination, do not teach or suggest the following claim limitations.

Quaif and *Ohsawa*, taken singularly or in combination, do not teach or suggest “a drive unit, for reciprocally driving the pins in both forward and backward directions relative to the form on the platen” as recited in claim 4 and similarly in claim 6. The Examiner refers to element 18 in Figure 1 of *Quaif* as reading the above-cited claim limitation. Paper No. 2, Page 4. Instead, *Quaif* teaches:

[t]he carriage upon which the print heads are mounted is driven by a reversible dc motor under the control of motor control *for accelerating motor up to print velocity and for maintaining a substantially constant velocity during printing*. Motor control varies the speed of dc motor by means of a dual feedback from the driven carriage and from power supply to maintain constant motor speed during power supply variations, without conventional regulation circuitry.

Quaif, column 3, lines 14-23. Thus, *Quaif* teaches driving the print heads by a motor where the motor is controlled by a motor control. The motor control is responsible for ensuring the motor maintains a substantially constant velocity during printing. This language does not teach or suggest a drive unit for *reciprocally driving the pins in both forward and backward directions relative to the form on the platen*.

Accordingly, one skilled in the art would not be able to recreate claims 4 and 6 in view of the cited prior art.

III. REJECTION OF CLAIM 5 UNDER 35 U.S.C. §103(a):

As stated above, a *prima facie* showing of obviousness requires the Examiner to establish, *inter alia*, that the prior art references teach or suggest, either alone or in combination, all of the limitations of the claimed invention, and the Examiner must provide a motivation or suggestion to combine or modify the prior art reference to make the claimed inventions. M.P.E.P. § 2142. The motivation or suggestion to combine references must come from one of three possible sources: the nature of the problem to be solved, the teaching of the prior art and the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 47 U.S.P.Q.2d 1453,1458 (Fed. Cir. 1998). The showings must be clear and particular. *In re Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433-34 (Fed. Cir. 2002); *In re Kotzab*, 217 F.3d 1365, 1370, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 200); *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). Broad conclusory statements regarding the teaching of multiple references, standing alone, are not evidence. *Id.*

In order to reject under 35 U.S.C. § 103, therefore, the Examiner must provide a proper motivation for combining or modifying the references. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1457-1458 (Fed. Cir. 1998); M.P.E.P. § 2142. The Examiner's motivation for modifying *Quaif* with *Ohsawa* and the *IBM Technical Disclosure Bulletin* so that the moving velocity of the pins is changed in order to alter the impact force is "*so that the impact force for the selected character can be precisely achieved.*" Paper No. 2, Page 6.

There is no motivation to combine *Quaif* and *Ohsawa* with the *IBM Technical Disclosure Bulletin* as there is no suggestion or motivation in either *Quaif*, *Ohsawa* or the *IBM Technical Disclosure Bulletin* or in their combination or in the knowledge of those ordinary skilled in the art to combine the teaching of *varying the print hammer repetition rate in accordance with the printing speed to maintain constant width of*

*the printed characters as taught in Quaif with the teaching of increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function as taught in Ohsawa as well as with the teaching of assigning a specific impact velocity to each character in the font as taught in the IBM Technical Disclosure Bulletin. As stated above, Quaif teaches varying the print hammer repetition rate in accordance with the printing speed to maintain constant width of the printed characters. Furthermore, as stated above, Ohsawa teaches increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high-density imprint function. Furthermore, the IBM Technical Disclosure Bulletin teaches "a specific impact velocity" that "should be assigned to each character in the font." IBM Technical Disclosure Bulletin (March 1979), page 410. The IBM Technical Disclosure Bulletin further teaches that "attached to the rocker is a velocity transducer which feeds a signal proportional to the velocity of the rocker and thus the print element." The IBM Technical Disclosure Bulletin (March 1979), page 4110. Thus, the IBM Technical Disclosure Bulletin teaches assigning a specific impact velocity to each character. The Examiner has not shown why a reference that teaches varying the print hammer repetition rate to maintain a constant width of the printed characters as taught in Quaif should be combined with a reference that teaches increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function as taught in Ohsawa as well as with a reference that teaches assigning a specific impact velocity to each character as taught in the IBM Technical Disclosure Bulletin from either the nature of the problem to be solved, the teachings of the prior art or in the knowledge of persons of ordinary skill in the art. In re Rouffet, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). The Examiner must submit **objective evidence** and not rely on the subject opinion in support of combining the reference that teaches varying the print hammer repetition rate to maintain constant width of the printed characters with a reference that teaches increasing the printing impact power in the case of a normal density imprint function and decreasing the*

printing impact power in the case of a high density imprint function as well as with a reference that teaches assigning a specific impact velocity to each character. In re Lee, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2002). Therefore, the Examiner has not presented a *prima facie* case of obviousness for rejecting claim 5.

As stated above, the Examiner's motivation for modifying *Quaif* with *Ohsawa* and the *IBM Technical Disclosure Bulletin* so that the *moving velocity of the pins is changed in order to alter the impact force is so that the impact force for the selected character can be precisely achieved*. The Examiner has not shown why *Quaif* should be modified with *Ohsawa* and the *IBM Technical Disclosure Bulletin* to *change the moving velocity of the pins in order to alter the impact force from either the nature of the problem to be solved, the teachings of the prior art or in the knowledge of persons of ordinary skill in the art*. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). Furthermore, the Examiner has not shown why *Quaif* should be modified with *Ohsawa* and the *IBM Technical Disclosure Bulletin* so that the *impact force for the selected character can be precisely achieved* from either the nature of the problem to be solved, the teachings of the prior art or the knowledge of persons of ordinary skill in the art. *Id.* The Examiner must submit **objective evidence** and not rely on his subjective opinion in support of modifying *Quaif* with *Ohsawa* and the *IBM Technical Disclosure Bulletin* to *change the moving velocity of the pins in order to alter the impact force*. *In re Lee*, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2000). Furthermore, the Examiner must submit **objective evidence** and not rely on his subjective opinion in support of modifying *Quaif* with *Ohsawa* and the *IBM Technical Disclosure Bulletin* so that the *impact force for the selected character can be precisely achieved*. *Id.* Therefore, the Examiner has not presented a *prima facie* case of obviousness for rejecting claim 5.

IV. CONCLUSION

As a result of the foregoing, Applicants respectfully assert that the Examiner's *prima facie* case of obviousness is not taught or suggested by the cited prior art since there are numerous claim limitations not taught or suggested in the cited prior art, and thus, one skilled in the art would not be able to recreate claims 4-6 in view of the cited prior art.

It is noted that words are italicized only for emphasis. Italicizing is not meant to imply that only those words that are italicized are not taught or suggested in the cited prior art.

As a result of the foregoing, Applicants respectfully assert that claims 1-13 are in condition for allowance and respectfully request an early allowance of such claims.

Applicants respectfully request that the Examiner call Applicants' attorney at the below listed number if the Examiner believes that such a discussion would be helpful in resolving any remaining problems.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE**In the Specification:**

The paragraph beginning at line 1 of page 8 has been amended as follows:

MPU 24 includes a communication unit 41 (for exchanging control signals with the host PC 10), a data analyzer 42 (for analyzing data received by the communication unit 41 [421] and for outputting the results to the individual sections), a mechanism controller 43 (for controlling the individual mechanisms, such as the printer head 21, the mechanism for feeding the print object (not shown) and the mechanism for feeding the ink ribbon 38), a printer head controller 44 (for controlling the movements of the printer head 21 and the dot pins 30), a key detection/display unit 45 (for detecting the state of the key manipulated on the operator panel 22, and for outputting information that is to be displayed on the display portion (not shown)), and a flash memory erasing/writing unit 46 (for erasing data from or writing data to the flash memory 26).